

Appl. No. 10/674,669
Atty. Docket No. 8598MRL
Amdt. dated May 15, 2006
Reply to Office Action of February 15, 2006
Customer No. 27752

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior listing of claims for this application.

1. (Currently amended) A halogen dioxide generating system, comprising:
 - a) a source of an aqueous feed solution comprising a halogen dioxide salt;
 - b) a non-membrane electrolysis cell comprising an anode and a cathode, and having a cell chamber with an inlet and an outlet;
 - c) ~~a means for passing a passage comprising the aqueous feed solution into the chamber and along a passage adjacent to the anode of said non-membrane electrolysis cell, and out of the outlet; and~~
 - d) an electric current supply to flow a current through the aqueous feed solution in the passage, ~~to convert a portion of the halogen dioxide salt to halogen dioxide, and thereby form an aqueous effluent comprising halogen dioxide that provides an electrical current of less than about 1.0 watts between said anode and said cathode.~~
2. (Original) The halogen dioxide generating system of claim 1, wherein the anode and the cathode are confronting and co-extensive, with a chamber gap of 0.5 mm or less.
3. (Original) The halogen dioxide generating system of claim 1, wherein the anode is a metallic porous anode.
4. (Original) The halogen dioxide generating system of claim 1, wherein said system is interfaced with an appliance.
5. (Original) The halogen dioxide generating system of claim 4, wherein said appliance is selected from the group consisting of refrigerators, water chillers, water fountains, soda fountains, oral irrigators, water purifiers, water coolers, washing machines, dishwashing machines, coffee makers, faucets and combinations thereof.

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6. (Original) The halogen dioxide generating system of claim 4, wherein said system is interfaced with said appliance via connection of a water inlet line to the inlet of said electrolysis cell and connection of an outlet line from the outlet of said electrolysis cell to an inlet of said appliance.

7. (Original) The halogen dioxide generating system of claim 4, wherein said system is interfaced with said appliance via connection of said electrolysis cell between an inlet of said appliance and an outlet of a water-dispensing device of said appliance.

8. (Original) The halogen dioxide generating system of claim 4, wherein said system is interfaced with said appliance via connection of said electrolysis cell between an inlet of said appliance and an outlet of an ice-dispensing device of said appliance.

9. (Currently amended) A halogen dioxide generating and re-circulating system, comprising:

a) a source of an aqueous feed solution comprising a halogen dioxide salt;

b) a non-membrane electrolysis cell comprising an anode and a cathode, said anode and said cathode being separated by a non-conducting porous flow, and having a cell chamber with an inlet and an outlet;

c) a means for passing the aqueous feed solution into passage with an inlet and outlet for the chamber formed through at least a portion of said non-conducting porous flow barrier, and along a passage adjacent to the anode, and out of the outlet;

d) an electric current supply to flow a current through the aqueous solution between the anode and the cathode, to convert at least a portion of the halogen dioxide salt in the passage to halogen dioxide, and thereby form an aqueous effluent comprising halogen dioxide; and

e) a means for delivering the aqueous effluent into contact with a halogen dioxide depletion target, whereby a portion of the halogen dioxide in the aqueous effluent oxidizes the depletion target and reverts back to a halogen dioxide salt; and

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[[f]] ~~a means for a return passage for returning the depleted effluent comprising the reverted halogen dioxide salt back to [[the]] said source.~~

10. (Original) The halogen dioxide generating system of claim 9, wherein said system is interfaced with an appliance.

11. (Original) The halogen dioxide generating system of claim 10, wherein said appliance is selected from the group consisting of refrigerators, water chillers, water fountains, soda fountains, oral irrigators, water purifiers, water coolers, washing machines, dishwashing machines, coffee makers, faucets and combinations thereof.

12. (Original) The halogen dioxide generating system of claim 10, wherein said system is interfaced with said appliance via connection of a water inlet line to the inlet of said electrolysis cell and connection of an outlet line from the outlet of said electrolysis cell to an inlet of said appliance.

13. (Original) The halogen dioxide generating system of claim 10, wherein said system is interfaced with said appliance via connection of said electrolysis cell between an inlet of said appliance and an outlet of a water-dispensing device of said appliance.

14. (Original) The halogen dioxide generating system of claim 10, wherein said system is interfaced with said appliance via connection of said electrolysis cell between an inlet of said appliance and an outlet of an ice-dispensing device of said appliance.

15. (New) An electrolysis device comprising:

at least one cell chamber;

at least one electrolytic cell with at least one anode and at least one cathode, wherein at least one pair of an anode and a cathode is separated by a porous barrier;

a reservoir connected to said at least one electrolytic cell by a passage;

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at least one pump connected to said reservoir and passage; and

at least one battery connected to said at least one anode and said at least one cathode providing less than 8.5 watts of power.